

REMARKS/ARGUMENTS

In the Office Action of December 15, 2008, claims 1-8 are rejected. In response, claims 1 and 2 have been amended. Additionally, new claims 9-12 have been added. Applicants hereby request reconsideration of the application in view of the claim amendments, the new claims and the below-provided remarks.

Claim Rejections under 35 U.S.C. 103

Claims 1-5 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Pellerin et al. (WO 02/075781 A2, hereafter “Pellerin”). Claims 6-8 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Pellerin in view of Krivokapic (U.S. Pat. No. 6,888,198). In response, claims 1 and 2 have been amended and new claims 9-12 have been added. Applicants respectfully submit that the pending claims are patentable over Pellerin and/or Krivokapic for the reasons provided below.

Independent Claim 1

Claim 1 has been amended to replace the term “silicide” with the term “silicide region.” Support for the amendment is found in Applicants’ specification at, for example, page 6, lines 12-16.

Amended claim 1 recites in part that “*the silicide region extends along the surface of the semiconductor body and continues for more than 10 nm under the side wall spacer*” (emphasis added). The Office Action on page 3 states that “Pellerin may not explicitly teach the silicide extends for more than 10 nm under the side wall spacer.” However, the Office Action further states that “[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to provide certain measurement...”

In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions

would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. (see MPEP § 2144.04(IV)(A)).

Compared to a silicide region extension of less than or equal to 10 nm under a side wall spacer, a silicide region extension of more than 10 nm under a side wall spacer lowers series resistance of diffusion regions and results in an improved operation of a semiconductor device. (see Applicants' specification at Fig. 2, page 2, lines 9-13 and page 6, lines 19-23). Thus, a semiconductor device having the claimed relative dimensions performs differently than the prior art device.

Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (see MPEP § 2144.05(II)(A)).

Because a silicide region extension of more than 10 nm under a side wall spacer lowers series resistance of diffusion regions and results in an improved operation of a semiconductor device, a silicide region extension of more than 10 nm under a side wall spacer is critical, and thus, is not obvious.

Therefore, Applicants respectfully assert that claim 1 is patentable over Pellerin.

Dependent Claims 2-8

Claim 2 has been amended to replace the term "silicide" with the term "silicide region." Support for the amendment is found in Applicants' specification at, for example, page 6, lines 12-16.

Claims 2-8 depend from and incorporate all of the limitations of independent claim 1. Thus, Applicants respectfully assert that claims 2-8 are allowable at least based on an allowable claim 1. Additionally, claims 4 and 5 may be allowable for further reasons, as described below.

Claims 4 and 5 recite in part that "*the side wall spacer is L-shaped.*" The Office Action suggests that the combination of a sidewall spacer (40A) and a second sidewall spacer (52), described in Pellerin, is equivalent to a "side wall spacer" of claim 1.

Although Pellerin teaches that the sidewall spacer (40A) is produced by performing an anisotropic etching process on an approximately "L"-shaped silicon dioxide structure (see Fig. 2B and page 5, lines 14-18), the combination of the sidewall spacer (40A) and the second sidewall spacer (52) is not L-shaped, as shown in Fig. 2D. Thus, claims 4 and 5 are not obvious over Pellerin.

New claims 9-12

New claims 9-12 have been added. Support for claim 9 is found in Applicants' specification at, for example, original claim 1, Fig. 2 and page 6, lines 12-16. Support for claim 10 is found in Applicants' specification at, for example, original claim 1, Fig. 2 and page 6, lines 12-16 and 19-26. Support for claim 11 is found in Applicants' specification at, for example, original claim 1, Fig. 2 and the paragraph beginning at page 5, line 33. Support for claim 12 is found in Applicants' specification at, for example, original claim 3.

New claims 9-12 depend from and incorporate all of the limitations of independent claim 1. Therefore, Applicants respectfully assert that claims 9-12 are allowable at least based on an allowable claim 1. Additionally, claims 9-12 may be allowable for further reasons, as described below.

With regard to claim 9, Applicants respectfully assert that Pellerin fails to teach that *"the at least one diffusion region comprises the silicide region,"* as recited in claim 9. Pellerin teaches that metal silicide contacts (50) are formed above an implanted region (44) and a portion of extension implant regions (46) of the implanted region (44). (see Figs. 2C and 2D and page 5, lines 35-39) As a result, the metal silicide contacts (50) are neither a part of the implanted region (44) nor a part of a portion of the extension implant regions (46) of the implanted region (44).

With regard to claim 10, Applicants respectfully assert that Pellerin fails to teach that *"the at least one diffusion region comprises a diffusion region extension, the silicide region comprising a silicide region extension, the silicide region extension falling completely within the diffusion region extension,"* as recited in claim 10. Pellerin teaches that metal silicide contacts (50) are formed above an implanted region (44) and a portion of extension implant regions (46) of the implanted region (44). (see Figs. 2C and 2D and

page 5, lines 35-39). As shown in Figs. 2C and 2D, the metal silicide contacts (50) do not have an extension falling completely within the extension implant regions (46) of the implanted region (44).

With regard to claim 11, Applicants respectfully assert that Pellerin fails to teach that *“the silicide region is completely below the side wall spacer,”* as recited in claim 11. The Office Action suggests that the combination of a sidewall spacer (40A) and a second sidewall spacer (52) is equivalent to a “side wall spacer” of claim 1. Pellerin teaches that a portion of metal silicide contacts (50) is positioned below the second sidewall spacer (52). (see Fig. 2D and page 6, lines 13-19). However, Pellerin also teaches that the metal silicide contacts (50) are between the sidewall spacer (40A) and insulation regions (42). (see Figs. 2C and 2D and page 5, lines 35-39). Therefore, the metal silicide contacts (50) are not completely below the combination of the sidewall spacer (40A) and the second sidewall spacer (52).

With regard to claim 12, Applicants respectfully assert Pellerin fails to teach that *“the metal is palladium (Pd),”* as recited in claim 12.

CONCLUSION

Applicants respectfully request reconsideration of the claims in view of the claim amendments, the new claims and the remarks made herein. A notice of allowance is earnestly solicited.

Respectfully submitted,

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